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# PREVALENCE OF PLAQUE RUPTURE IS HIGHER IN PATIENTS WITH AORTIC DILATATION: FIRST OBSERVATION OF THE EARLY STAGE OF ANEURISMAL FORMATION WITH NON-OBSTRUCTIVE ANGIOSCOPY

Poster Contributions
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Session Title: Predictors and Clinical Management of Aortic Disease
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Authors: *Satoru Takahashi, Sei Komatsu, Mitsuhiko Takewa, Junichi Yoshida, Yasuhiko Kobayashi, Atsuko Imai, Hitoshi Minamiguchi, Tomoki Ohara, Kazuhisa Kodama, Amagasaki Central Hospital, Amagasaki, Japan*

**Background:** We have established novel non-obstructive angioscopic system which detected the atherosclerotic changes of endovascular surface from ascending aorta to common iliac artery continuously, such as ruptured plaque in vivo. This study aims to explore the prevalence and the extent of systemic aorta having aortic dilatation comparing control subjects.

**Methods:** A total of consecutive 108 patients (69±14 yrs: mean±SD) who was or suspected coronary heart disease were enrolled. Whole scanning of aortic plaque was performed by non-obstructive angioscopy after invasive coronary angiography. Patients were divided into two groups after aortic CT angiography: patients with or without aortic dilatation. Angioscopic yellow color grade was evaluated traditional 4-point scales (1: slight yellow, 2: yellow, 3: bright yellow and 4: ruptured plaque). The number of systemic ruptured plaques, total plaque score which was the sum of the yellow grades, and maximum yellow grade between two groups.

**Results:** Aortic dilatations were detected in 46 patients. The number of systemic ruptured plaques (6.8±5.5 vs. 3.3±3.3; p=0.001), total plaque score (65±35 vs. 34±26; p<0.001), and maximum yellow grade (3.9±0.4 vs. 3.3±0.9; p<0.001) was significantly higher in patients with aortic dilatation than those without. Especially, the numbers of ruptured plaques in descending thoracic aorta (1.3±1.8 vs. 0.7±1.2; p=0.044) and abdominal aorta (2.3±2.2 vs. 0.8±1.2; p<0.001) were significantly higher in patients with aortic dilatation than those without. Multiple regression analysis revealed that age (β=0.255, p=0.025), diabetes (β=0.242, p=0.027), and aortic dilatation (β=0.328, p=0.004) were positively correlated with the number of systemic ruptured plaques.

**Conclusion:** Multiple plaque ruptures were detected in systemic aorta by our original non-obstructive angioscopy. Using this, the prevalence and the number of ruptured plaque in patients with aortic dilatation, suggesting that concomitant plaque ruptures might be related to aortic dilatation.